IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1 – 32 (Canceled).

Claim 33 (Previously Presented): A method of computing beamforming for signals in a communication system comprising:
    receiving a signal, wherein the signal comprises a plurality of tones;
    estimating noise for a plurality of a first type of tones; and
    computing beamforming for at least one of a plurality of a second type of tones
        based at least in part on noise estimation of at least one of the plurality of
        the first type of tones that is nearest the at least one of the plurality of the
        second type of tones in the signal.

Claim 34 (Previously Presented): A method according to claim 33, wherein estimating the noise comprising:
    computing a first indication of difference between first one of the first type of
        tones in one burst relative to the first one of the first type of tones in a
        preceding burst;
    computing a second indication of variance and correlation of the first indication;
        and
    averaging the second indication over time.

Claim 35 (Previously Presented): A method according to claim 33, wherein
    the signal is a multiple carrier signal;
    the first type of tones are training tones; and
    the second type of tones are data tones.

Claim 36 (Previously Presented): A method according to claim 33, further comprising:

indexing the plurality of the first type of tones;

indexing the plurality of the second type of tones;

selecting at least one of the plurality of the first type of indexed tones that is nearest a given indexed second type of tone in the signal; and

computing beamforming for the given indexed second type of tone based at least in part on noise estimation of the selected first type of indexed tones that is nearest the given indexed second type of tone in the signal.

Claim 37 (Previously Presented): A method according to claim 33, wherein computing the beamforming comprising:

computing at least one of soft decisions and noise to signal ratio estimates for the at least one of the plurality of the second type of tones.

Claim 38 (Previously Presented): A communication receiver configured to compute beamforming for signals in a communication system comprising:

means for receiving a signal, wherein the signal comprises a plurality of tones;

means for estimating noise for a plurality of a first type of tones; and

means for computing beamforming for at least one of a plurality of a second type of tones based at least in part on noise estimation of at least one of the plurality of the first type of tones that is nearest the at least one of the plurality of the second type of tones in the signal.

Claim 39 (Previously Presented): A communication receiver according to claim 38, further comprising:

means for computing a first indication of difference between a first one of the first type of tones in one burst relative to the first one of the first type of tones in a preceding burst;

means for computing a second indication of variance and correlation of the first indication; and

means for averaging the second indication over time.

Claim 40 (Previously Presented): A communication receiver according to claim 38, wherein

the signal is a multiple carrier signal;

the first type of tones are training tones; and

the second type of tones are data tones.

Claim 41 (Previously Presented): A communication receiver according to claim 38, further comprising:

means for indexing the plurality of first type of tones;

means for indexing the plurality of second type of tones;

means for selecting at least one of the plurality of the first type of indexed tones that is nearest a given indexed second type of tone in the signal; and

means for computing beamforming for the given indexed second type of tone based at least in part on noise estimation of the selected first type of indexed tones that is nearest the given indexed second type of tone in the signal.

Claim 42 (Previously Presented): A communication receiver according to claim 33, further comprising:

means for computing at least one of soft decisions and noise to signal ration estimates for the at least one of the plurality of the second type of tones.

Claim 43 (Previously Presented): A communication receiver comprising:

a tone extractor configured to extract a plurality of first type of tones from a received signal;

a noise estimator, configured to estimate noise for the plurality of the first type of tones; and

a beamformer, configured to compute beamforming for a plurality of a second type of tones in the received signal based at least in part on the noise

estimation of respective ones of the first type of plurality of tones that are nearest to the second type of tones in the received signal.

Claim 44 (Previously Presented): A communication receiver according to claim 43, wherein the noise estimator comprises:

an index operative to index through the plurality of the first type of tones;

a first noise estimation portion operative to compute a first indication of difference between an indexed tone of the first plurality of tones in one burst relative to an indexed tone of the first plurality of tones in a preceding burst;

a second noise estimation portion operative to compute a second indication of variance and correlation of the first indication computed by the first noise estimation portion; and

a time averager operative to average the second indication computed by the second noise estimation portion over time.

Claim 45 (Previously Presented): A communication receiver according to claim 43, wherein

the received signal is a multiple carrier signal;

the first type of tones are training tones; and

the second type of tones are data tones.

Claim 46 (Previously Presented): A communication receiver according to claim 43, further comprising:

an indexing function operative to select an indexed tone from the plurality of the second type of tones for which a current beamforming computation is to be performed; and

a noise selection function operative to select a first type of tone nearest to the indexed second type of tone so that the computed noise estimation for the selected first type of tone can be employed in the respective beamforming computation for the indexed second type of tone.

Claim 47 (Previously Presented): A communication receiver according to claim 43, wherein the beamformer is further configured to compute at least one of soft decisions and noise to signal ratio estimates for at least some of the second type of tones.

Claim 48 (Previously Presented): A communication receiver of claim 43 being implemented as part of an application specific integrated circuit.

Claim 49 (Previously Presented): A communication receiver of claim 43 being implemented as executable instructions programmed in a digital signal processor.

Claim 50 (Previously Presented): A communication receiver of claim 43, wherein
The received signal is a wireless signal having more than one type of tones in the frequency domain; and
the first type of tones being interspersed throughout the received signal and fewer in number than the other type of tones in the received signal.

Claim 51 (Previously Presented): A wireless communications system, comprising:
at least one antenna operative to receive a wireless signal and convert the received signal into a corresponding electrical signal;
a preprocessing system operative to process the electronic signal and convert the electrical signal from the at least one antenna into a digital signal and perform desired preprocessing of the digital signal to provide a preprocessed digital signal in the frequency domain having a plurality of tones, some of the plurality of tones being of a first type and others of the plurality of tones being of a second type, the tones of the first type having a fewer number of tones than the tones of the second type;
a noise estimator operative to estimate noise for tones of the preprocessed digital signal of the first type and to provide an indication of estimated noise for the tones of the first type; and

a beamformer operative to perform beamforming computations for tones of the
preprocessed digital signal of the second type, the beamforming
computations employing the indication of estimated noise for a tone of the
first type nearest each respective tone of the second type.

Claim 52 (Previously Presented): The system of claim 51, wherein the tones of
the preprocessed digital signal conforming to a multiple carrier modulation technique in
which the first type of tones corresponds to training tones and the second type of tones
corresponds to data tones.

Claim 53 (Previously Presented): The system of claim 52, further comprising a
selection system operative to determine which training tone is nearest a given data
tone, such that the indication of estimated noise for the training tone nearest the given
data tone can be employed in the beamforming computation for the given data tone.